Note on the Amphibious Habit of Lycosa.—Dr. McCook alluded to another interesting fact in the life-history of *Lycosa*, brought to his attention by Mr. Alan Gentry. This gentleman, during the winter, visited a pond in the vicinity of Philadelphia (Germantown) which was frozen over. He cut a slab from the ice about eight to ten feet from the bank, and was surprised to see several spiders running about in the water. They were passing from point to point by silken lines stretched underneath the surface between certain water-plants. Several were captured, but unfortunately the specimens were not preserved. Mr. Thomas G. Gentry, who saw them, says that they were Lycosids, and from his description of the eyes he is evidently correct. It is a remarkable and novel fact to find these creatures thus living in full health and activity in mid-winter *within* the waters of a frozen pond, and so far from the bank in which the burrows of their congeners are so commonly found. It has been believed, heretofore, and doubtless it is generally true, that the Lycosids winter in deep burrows in the ground, sealed up tightly to maintain a higher temperature. But the above observation opens up a new and very strange chapter in the winter behavior of these spiders, as well as in the amphibious nature of their habits.

Pentastomum proboscideum.—Prof. Leidy exhibited specimens of this parasite, presented to him by Mr. Norman Spang, of Etna, Pa., who recently obtained them in Florida, from the lung of a large rattlesnake, *Crotalus adamanteus.*. They are cylindrical incurved, annulated, largest and rounded at the head, tapering behind, and becoming again larger and rounded at the end; and terminating ventrally in a short conical point. There are six of them, with the following measurements:—9 lines long by 1½ lines at the head; 13 lines by 1½ lines; 24 by 2½; 28 by 2½; 30 by 3, and 31 by 3. The species was first found by Humboldt in *Crotalus horridus.* It is common in the *Boa constrictor*, in which Professor Leidy had also observed it several times. It has likewise been found in a number of other serpents. Other species occur in different mammals, including man, reptiles and fishes. These singular parasites are regarded as the most degraded form of arachnida, in the mature stage being reduced to a worm-like, limbless body.

May 20.

Mr. Thomas Meehan, Vice-President, in the chair.

Eighteen persons present.

The Nature of a Fasciated Branch.—At the meeting of the Botanical Section on the 12th, Mr. Thomas Meehan called attention to a paper contributed by him to the *Proceedings of the*

American Association for the Advancement of Science, p. 277, vol. xix, 1870, in which, contrary to the accepted hypothesis that a fasciated branch was due to "over-luxuriance," or a high condition of vitality, he showed that the result was due to a degradation of vital power. A number of phenomena conceded to result from low vital conditions, were shown to be inseparably connected with fasciation, the essential feature of which is the production of an extraordinary number of buds, with a corresponding suppression of the normal internodal spaces.

This is precisely the condition of a flowering branch; and all its attendant phenomena find their analogue in a fasciated stem. Taking a composite flower in illustration—a sunflower, for instance—we find on the receptacle a coil of many hundred florets, each floret with a chaffy scale at the base. Each of these florets in morphology represents a branch, and the scale a leaf or bract, from the axil of which the branch would have sprung. If we imagine the head uncoiled, and everything in a normal vegetative condition, as distinct from the condition of inflorescence, we might have a sunflower plant a hundred feet high or more. But with the approach to the flowering stage we have a suppression of vegetative development, with a highly accelerated development of buds, out of which are morphologized the floral parts.

The receptacle on which the involucral scales and other parts of inflorescence in a compound flower, had also its analogue in the thickened stems which bore the buds in a fasciated branch.

The phenomena which indicated low vital power in the fasciated branch, were all manifested in a flower. Taking the test of vital power as the ability to retain life under equal circumstances, we find the leaves on a fasciated branch dying before those on the rest of the tree. On the balsam fir, an evergreen, the leaves are wholly deciduous; or a deciduous ally, the larch, the leaves mature before the others. On other trees we find always the leaves enduring longer than those on the fasciated. We say the leaves on the latter have a lower vital power. In severe winters the branches in the fasciation wholly die, in many cases, while those on other portions of the tree survive, and again we say, because they have a lower vital power. Precisely the same circumstances attend inflorescence. The leaves in their procession from a normal condition to petals lose this evidence of vitality in proportion to the degree of transformation. The petal dies before the sepal, the sepal before the bract, and the bract before the leaves, in the general order of anthesia, in a compound flower, though there are cases where, secondary causes coming into play, this rule would be reversed, but, in a general way, the soundness of the point would not be disputed.

From all these facts in analogy it might be said in addition to the points brought out in the paper of 1870, above cited, that *a fasciated branch is an imperfect and precocious attempt to enter on the flowering or reproductive stage.*